

TIPS capacity elements

TIPS CG – 14 FEBRUARY 2024

- The aim of this presentation is to provide a recap of the current sizing of the TIPS platform from a capacity viewpoint.
- Non-functional requirements are part of the TIPS User Requirements Document (URD).
- The topic is of interest in light of (i) the entry into force of the new EU regulations and (ii) ongoing/forthcoming on-boarding initiatives in TIPS.

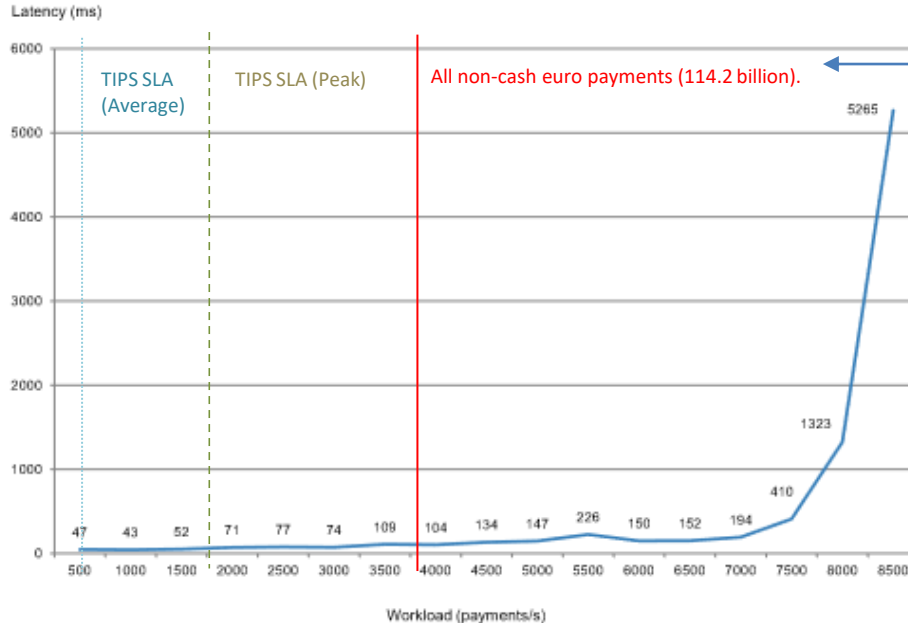
ID	TIPS.UR.10.120
Name	Instant payments processing throughput
Requirement	TIPS shall be able to process up to an average number of 500 incoming instant payment transactions per second, with a peak of up to 2,000 incoming instant payment transactions per second.

This value equals the following hourly, daily and yearly volumes:



Hourly volume of payment transactions	1.8 millions/hour
Daily volume of payment transactions	43.2 millions/day
Yearly volume of payment transactions	15.77 billions/year

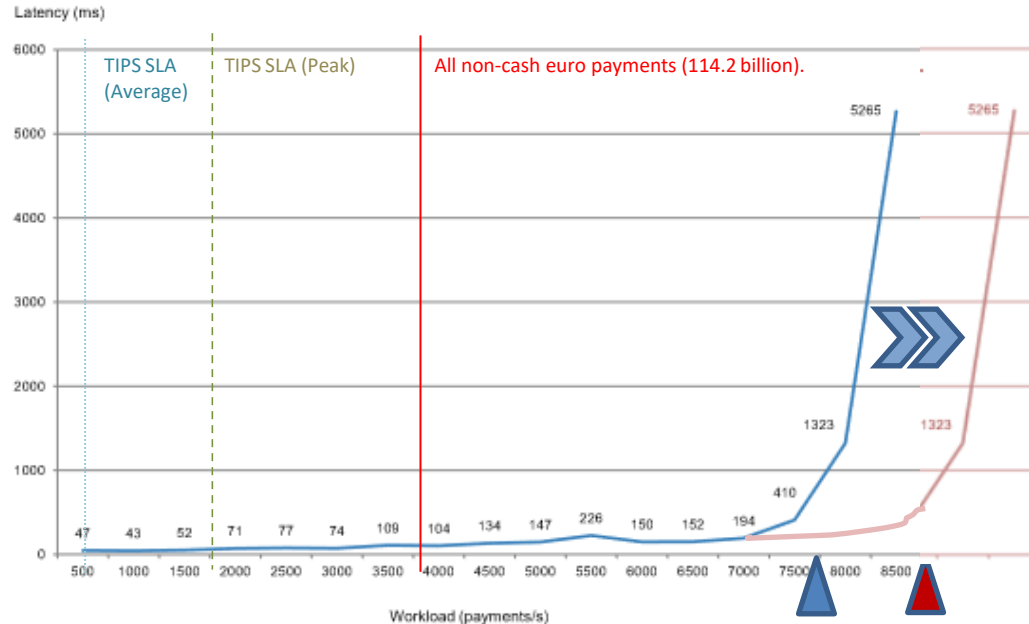
- The current volume of transaction processed in TIPS is far below the allocated capacity:
 - Considering current daily volume on euro side: **~2,77%** of the overall capacity
 - Adding the expected growth coming from SEK migration: **~8,56%** of the overall capacity
 - Adding other forthcoming onboarding initiatives: **~12%** of the overall capacity



The red line represents the overall volume of all non-cash euro payments.

Under the optimistic assumption that they are all settled in TIPS, the overall latency is rather stable.

- The latency degradation of around ~8,000 TPS, experimented with the current architecture, can be shifted further on the right-end side with appropriate horizontal scalability measures (e.g. by adding additional nodes acting as Message Routers).



- As part of the Concession Contract, each Network Service Provider (NSP) has been requested to provide a **throttling mechanism** in case of flooding at the level of the network layer.
- Therefore, the TIPS application is protected by the two NSPs that, upon detection of a peak exceeding the current Service Level (i.e., above 2,000 TPS), shall slow down the incoming throughput in order to avoid traffic overflows.

- At the current juncture, **TIPS has no capacity issues** and is not expected to have any in the future.
- Conversely, there is a potential issue related to the need to guarantee the latency of 'real' instant payments, in presence of concurrent high volumes of non-instant traffic, such as bulk and non-time critical payments.
 - Addressing this issue may lead to adaptations (most likely not only in TIPS, but also for PSPs and NSPs).
 - However, in order to tailor the appropriate technical solutions, business requirements shall first be defined, both in terms of (i) expected functionality and (ii) non-functional requirements.

Thank you for the attention!